Ten-Year Experience of Minimally Invasive Valve Surgery at a Single Center

UMC Heart Center, Astana

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UMC
UNIVERSITY MEDICAL CENTER
Heart Center Astana

BACKGROUND & AIMS

Context: MICS reduces trauma, blood loss, ICU stay and recovery vs. full sternotomy.
Aim: 10-year single-center review of MICS at UMC Astana — safety & efficacy across all access routes.
Design: Retrospective analysis. 2015–2025. n = 683 procedures.

PROGRAMME MILESTONES

1. **2015** First minithoracotomy at UMC
2. **2017** J-sternotomy introduced;
3. **2020** MIDCAB launched; volume exceeds 60 cases/yr
4. **2025** 10-year mark: 683 procedures all access types

683
Total Procedures

10 yrs
Study Duration

ACCESS ROUTES

Minithoracotomy **607 (88.9%)**

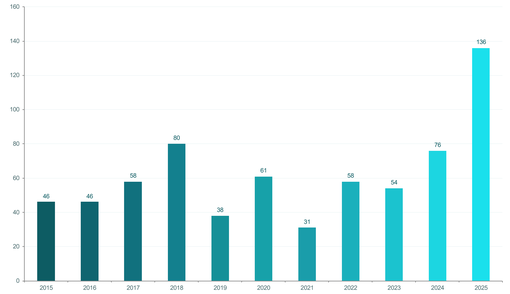
J-Sternotomy **76 (11.1%)**

SURGICAL ACCESS TYPES

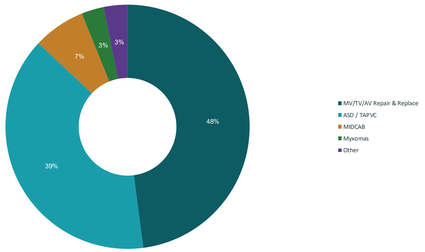
- **Minithoracotomy**
- **J-Sternotomy**
- **MIDCAB**

ANNUAL OPERATIVE VOLUME

Total n = 683 · UMC Heart Center Astana ·



MINITHORACOTOMY BREAKDOWN (N=607)



J-STERNOTOMY BREAKDOWN (N=76)

AVR	71
AVR + Manuguian root	2
TAVI transaortic	2
Bentall De Bono	1

PATIENT & PROCEDURE CHARACTERISTICS MINITHORACOTOMY VALVE PROCEDURES (N=484)

MV Repair	148 (30.6%)
MV Replacement	99 (20.5%)
ASD / TAPVC Repair	213 (44%)
Myxoma Resection	15 (3.1%)
Other Procedures	9 (1.9%)

J-STERNOTOMY PATIENT PROFILE (N=76)

46.6±14.9
Mean Age (yrs)

76% Male
M:58 / F:17

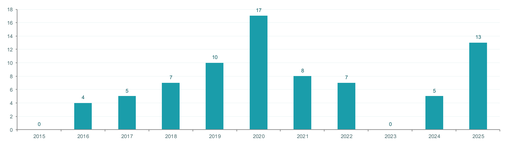
Mechanical: 54 (71%) / Biological: 22 (29%)

MIDCAB PROFILE (N=64)

57±2.5
Mean Age (yrs)

59% Male
M:38 / F:26

MIDCAB ANNUAL VOLUME



POSTOPERATIVE RESULTS (N=683)

30-day outcomes — all access routes combined

0.29%
30-day mortality (2 / 683)

✓ 30-day Mortality	2
· Postop Bleeding	5
✓ Postop IM	0
✓ Postop Dialysis	0
· → Sternotomy	2
· Wound Infection	1
· Atrial Fibrillation	20
· AV Block Gr.1	9
· LBBB	8
· AV Block Gr.2–3	7

** Includes AF (32), AV block Gr.1–3, LBBB (8)*

CONCLUSION

A 10-year single-center study confirms MICS is effective & safe.
683 procedures · 0.29% mortality · 0 MI · 0 dialysis

"Minimally invasive surgery: less trauma, same — or better — outcomes."